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Comparability of Reporting Between the Birth Certificate and the 1980 National Natality Survey

Data Evaluation and Methods Research
Series 2, No. 99

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A comparability study of the responses to the 1980 National Natality Survey to similar items from the birth certificate includes demographic variables, pregnancy history items, prenatal care, and outcome measures.

Data Evaluation and Methods Research
Series 2, No. 99

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Symbols

- - -	Data not available
. . .	Category not applicable
-	Quantity zero
0.0	Quantity more than zero but less than 0.05
Z	Quantity more than zero but less than 500 where numbers are rounded to thousands
*	Figure does not meet standard of reliability or precision
#	Figure suppressed to comply with confidentiality requirements

Comparability of Reporting Between the Birth Certificate and the 1980 National Natality Survey

by Lois A. Fingerhut, M.A., and Joel C. Kleinman, Ph.D.,
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Introduction

The primary source of annual natality data in the United States is the birth certificate. (See appendix figure I.) However, relatively little information exists on the quality of the data reported on the birth certificate. It is not very often that the analyst has an independent source of information with which to compare the birth certificate data. In 1980 the National Natality Survey was conducted by the National Center for Health Statistics. Like its 1972, 1967–69, 1964–66, and 1963 predecessors, this followback survey was designed to provide, primarily, a large amount of information, most of which is not available elsewhere, on a sample of live births.

The 1980 National Natality Survey also provides an opportunity to assess the comparability of information obtained from the birth certificate with information obtained from an independent source using a different method of data collection. The purpose of this report is to compare the responses from the National Natality Survey with responses on the birth certificate for those items common to both sources. Although it will not be possible to state which source of data is valid, speculation is possible in certain instances.

READEX MICRO best copy available

Sources and limitations of data

The data presented in this report are based on the 1980 National Natality Survey (NNS) conducted by the National Center for Health Statistics (NCHS). A detailed description of the methods and procedures employed in these surveys will be found in a forthcoming report of NCHS.[1]

The 1980 NNS was based on a probability sample of the registered live births in the United States during 1980. (It is estimated that 99 percent of all births in the United States in 1980 were registered.[2]) The files of birth certificates in the 52 registration areas in the United States constituted the sampling frame for the survey. The registration areas include the 50 States, the District of Columbia, and New York City.

This survey was conducted in basically the same manner as all of NCHS followback surveys: A nationally representative sample of vital records is selected from State vital records, and information is collected from the informants named on them. However, in this case the sample was drawn so that a disproportionate number of infants weighing less than 2,500 grams was included to permit detailed analyses of these high-risk infants. In all, the sample consists of 9,941 live births.

Information beyond that available from the certificates of live birth was sought from sources named on these vital records. Questionnaires were mailed to mothers who were married ($N = 7,825$ for the NNS). These women were asked to provide additional information on prenatal health practices, on prenatal care, on previous pregnancies, and on social and demographic characteristics of themselves and their husbands. (See appendix.) A telephone interview containing a subset of questions from the mail questionnaire was conducted among women who did not respond to the mail questionnaire. To ensure their privacy, mothers who were not married were not contacted.

Regardless of the mother's marital status, questionnaires were mailed to hospitals and to attendants at deliveries named on the vital records. Questionnaires were sent to hospitals for all deliveries that occurred in a hospital or en route to a hospital ($N = 9,855$ for the NNS). The hospital questionnaires focused on labor and delivery characteristics, health characteristics of the mother and infant, information on prenatal visits, and exposure to radiation examinations or treatments during the 12 months preceding delivery.

Questionnaires were also mailed to attendants at delivery (physicians, nurse-midwives, and so forth) for those deliveries where the attendant's address was not the same as the address of the hospital ($N = 7,939$ for the NNS). The questionnaires sent to attendants also sought information on prenatal visits and exposure to radiation examinations or treatments.

If the hospital or the attendant at delivery had little or no information concerning prenatal care, the name and address of another facility or individual that could provide this information was requested, and questionnaires were sent accordingly.[3]

This analysis is limited to survey and birth certificate respondents of single live births. The overall response rates from the mother's questionnaire are 81.7 percent for white (as defined on the birth certificate) mothers and 64.5 percent for black mothers. From the hospital questionnaire the response rates (also based on single live births) are 78.2 percent for white births and 67.9 percent for black births (table A). Response rates vary by certain characteristics such as age and education of mother. A more detailed discussion of NNS response rates will be found in a forthcoming NCHS report.[1]

When assessing comparability between the birth certificate and NNS, it is important to remember that the data refer only to the selected sample of respondents. In certain cases (for example, questions asked only on the mother's mail questionnaire) these effective response rates can be below 50 percent. The effective nonresponse rates are based on the total number of potential respondents. The rate is defined as the number of nonrespondents to particular questions (item nonresponse) plus the number of nonrespondents to the entire survey per 100 nonrespondents (numerator) plus respondents. Excluded are respondents from those States that did not collect selected variables on the birth certificate (appendix table I). The following sections of this report indicate the effective nonresponse rates for particular variables used in this analysis (appendix table II). The total numbers shown in the detailed tables exclude all those cases of item nonresponse. In general, item nonresponse rates are quite low, often less than 2 percent.

Finally, each variable in this report is examined separately for white and black respondents because of the vastly different

[1]National Center for Health Statistics, K. Keppel: Methods and response characteristics, 1980 National Natality and Fetal Mortality Surveys. *Vital and Health Statistics*. Series 2. Public Health Service, DHHS, Hyattsville, Md. To be published.

[2]National Center for Health Statistics: *Vital Statistics of the United States, 1980*, Vol. I, Natality. DHHS Pub. No. (PHS) 85-1100. Public Health Service. Washington. U.S. Government Printing Office, 1984.

[3]P. Placek: The 1980 National Natality Survey and National Fetal Mortality Survey—Methods used and PHS agency participation. *Public Health Reports* 99(2):111-116, Mar.-Apr. 1984.

Table A. Number of respondents and response rates for the mother's and the hospital questionnaires for single live births, by race and marital status of mother: National Natality Survey, 1980

Category of respondent	Number	Response rate[1]
Total number of live births sampled	9,941	...
Total number of single live births	[2]9,536	...
Mother's questionnaire		
White mothers[3]	7,580	81.7
Respondents to mail questionnaire	3,876	...
Respondents to telephone questionnaire	1,523	...
Nonrespondents	1,213	...
Unmarried—no questionnaire sent	968	...
Black mothers[3]	1,651	64.5
Respondents to mail questionnaire	241	...
Respondents to telephone questionnaire	182	...
Nonrespondents	233	...
Unmarried—no questionnaire sent	995	...
Hospital questionnaire		
White mothers[3]	7,580	78.2
Respondents	5,872	...
Nonrespondents	1,637	...
Out-of-hospital delivery—no questionnaire sent	71	...
Married	6,612	78.8
Respondents	5,168	...
Nonrespondents	1,390	...
Out-of-hospital delivery—nc questionnaire sent	54	...
Not married	968	74.0
Respondents	704	...
Nonrespondents	247	...
Out-of-hospital delivery—no questionnaire sent	17	...
Black mothers[3]	1,651	67.9
Respondents	1,114	...
Nonrespondents	527	...
Out-of-hospital delivery—no questionnaire sent	10	...
Married	656	68.3
Respondents	445	...
Nonrespondents	207	...
Out-of-hospital delivery—no questionnaire sent	4	...
Not married	995	67.6
Respondents	669	...
Nonrespondents	320	...
Out-of-hospital delivery—no questionnaire sent	6	...

[1]Rate is the number of respondents divided by the number of respondents plus nonrespondents multiplied by 100.
[2]Includes 284 cases of other races and 21 cases with mother's race not stated.
[3]As defined by the birth certificate.

Table B. Data items from the birth certificate and source of comparable data from National Natality Survey: 1980

Birth certificate item	Mother's mail questionnaire	Mother's telephone questionnaire	Hospital questionnaire
Race of mother	X	X	
Race of father	X	X	
Age of mother	X	X	
Age of father	X		
Education of mother	X	X[1]	
Education of father	X	X	
Delivery date	X	X	
Live birth order	X	X	
Other pregnancy terminations	X	X	
Outcome of last pregnancy	X	X	
Month prenatal care began	X		
Birth weight			X
Gestation			X
Apgar score:			
1 minute			X
5 minute			X

characteristics of white and black births as well as the large difference in NNS response rates.

Because the mother's questionnaire was only sent to married mothers, most data items are compared among married mothers. In 1980, 55 percent of all black births in the United States occurred to unmarried black mothers (compared with 11 percent of white births), causing a serious limitation to the data for black mothers. However, the hospital questionnaire was mailed regardless of mother's marital status and, hence, the item responses from this source provide more complete information for black births.

All tables in this report are for single births. Plural births (as defined on the birth certificate) were omitted because of the possibility of confusing the sampled birth with the "wrong" 1980 delivery. Table B shows the items included in this analysis and the source of the data.

Because it is impossible to determine whether the birth certificate or NNS provides the correct information, the choice of denominators for percents is somewhat arbitrary. Birth certificate counts have been chosen as denominators, and the percent of survey respondents is presented in the same category as the measure of agreement. This decision was made to facilitate assessment of the potential misclassification in the annual natality statistics which are based on birth certificate data.

Demographic measures

Race of mother and father

Reporting of race was highly consistent between the birth certificate and the mother's questionnaire (mail and telephone). Agreement for mothers and fathers was 95.5 and 94.4 percent, respectively, for those reported as white on the birth certificate, and 96.1 and 94.8 percent, respectively, for those reported as black (table C). It is noteworthy that of the 239 mothers coded as "white" on the birth certificate but not on the NNS, 55 percent were coded as "other" (table 1). About half of these "others" defined their national origin on the survey (as distinct from race) as Mexican. Because in 1980 98 percent of births to women of Mexican heritage were classified as white on the birth certificate, inclusion of these births with all other white births would bring the two sources into closer agreement. Similar proportions were noted for fathers (table 2). The effective nonresponse rates for mother's and father's races are 21.7 and 22.5 percent, respectively.

Age of mother and father

Age is defined on the birth certificate as age at time of delivery (which translates to age as of last birthday). The mother's questionnaire asks for date of birth (mother's birth date comes from the mail and telephone questionnaires; father's birth date is asked only on the mail questionnaire). From the parents' date of birth and the delivery date of the infant (see section entitled "Delivery dates"), age of parents at time of delivery was computed for the survey data. Even though the two sources did not obtain age in the same manner, agreement was very high (tables D and 3). By single years of age, white mothers' ages agreed in 97.4 percent of the cases; in 5-year age groups, the two sources agreed in 99.3 percent of the cases. Among black mothers, agreement was also very high: 94.3 percent in single years and 98.1 percent for 5-year age groups.

Table C. Race of mother and father given as percent of cases from the mother's questionnaire in agreement with the birth certificate: 1980

Race on birth certificate	*Mother*	*Father*
	Percent	
White	95.5	94.4
Black	96.1	94.8
Other	94.7	95.2

NOTE: National Natality Survey data are from the mail and telephone versions of the mother's questionnaire.

Table D. Age of mother and father given as percent of cases from the mother's questionnaire in agreement with the birth certificate by race: 1980

Age on birth certificate	*Mother*		*Father*	
	White	*Black*	*White*	*Black*
	Percent			
All ages	99.3	98.1	98.7	93.8
Under 20 years	99.1	94.6	97.7	*100.0
20–24 years	99.3	98.6	98.8	90.6
25–29 years	99.6	98.5	98.8	95.5
30–34 years	99.3	98.7	98.5	90.4
35 years and over	97.3	*96.7	98.5	*97.6

NOTES: National Natality Survey data for the mother are from the mail and telephone versions of the mother's questionnaire and for the father are from the mail version only.

Race is as defined by the birth certificate.

All age totals are for grouped data.

Comparability for father's age was not quite as high. By single year of age, agreement was only 93.8 percent for white fathers and 80.8 percent for black fathers. Discrepancies were mostly limited to within 5-year age groups—agreement increased to 98.7 percent for white fathers and 93.8 percent for black fathers when 5-year age groups were compared. Among white persons, the general tendency was for the survey to understate father's age relative to the birth certificate; no pattern could be discerned for black persons (table 4).

The effective nonresponse rates are much higher for fathers than for mothers because father's birth date was not included on the telephone questionnaire. The rates are 18.7 and 36.0 percent for white and black mothers, respectively, and 42.4 and 63.4 percent for white and black fathers, respectively.

Education of mother and father

Education of mother and father was reported on the birth certificate by 47 States and the District of Columbia in 1980. Agreement levels between the birth certificate and the mother's questionnaire (mail and telephone) were generally highest for men and women with 4 or more years of college education and lowest for those with less than 9 years of schooling (tables E, 5, and 6). Overall agreement for a five-level categorization ranged from a high of 88 percent for white mothers to a low of 78 percent for black fathers.

Most of the discrepancies appear to result from "heaping" on grade 12. Agreement with the birth certificate for white

Table E. Education of mother and father given as percent of cases from the mother's questionnaire in agreement with the birth certificate by race: 1980

Completed years of education on birth certificate	Mother		Father	
	White	Black	White	Black
	Percent			
Total	88.0	84.3	86.3	77.9
0–8 years	75.3	*83.3	74.8	*58.3
9–11 years	87.1	76.9	84.2	78.0
12 years	90.7	83.8	86.9	79.4
13–15 years	78.5	84.5	77.0	72.2
16 years or more	93.7	92.9	94.7	83.3

NOTES: Data for California, Texas, and Washington are excluded because the information is not gathered on the birth certificates in these States.

National Natality Survey data are from the mail and telephone versions of the mother's questionnaire.

Agreement is for grouped data.

mother's education was only 78.5 percent at grades 13–15 with an additional 19.9 percent of those stating grades 13–15 on the certificate indicating grade 12 on the survey. The largest discrepancy occurs between grades 12 and 13. Of those white mothers who were classified as grade 13 according to the birth certificate ($N = 428$), one-third indicated grade 12 on the survey (table 5).

There appears to be a rather plausible explanation for this. Of the 186 white mothers who indicated grade 12 on the survey questionnaire and grades 13–15 on the birth certificate, 82 percent had also indicated on the survey that they had had vocational or trade school training (which was not to be included in the years of regular schooling). On the other hand, only 28 percent of the 1,841 white mothers who indicated grade 12 on both the questionnaire and the birth certificate reported any vocational or trade school training. It appears, therefore, that the birth certificate often includes this type of post-high-school training as years beyond high school.

The effective nonresponse rates are similar for mother's and father's education and twice as high for black as for white respondents (18.0 and 37.1 percent for education of white and black mothers, respectively, and 19.1 and 38.1 percent for education of white and black fathers, respectively).

Delivery dates

Of all the items on the birth certificate, the one that ought to have the least amount of error associated with it is the delivery date. This is an objective "measure" not open to interpretation (apart from the time surrounding midnight). For the samples of single white live births ($N = 5,399$) and single black births ($N = 423$) the delivery dates according to the birth certificate agreed with the dates provided by white mothers in 97.5 percent of the cases and by black mothers in 95.9 percent of the cases. These percents exclude cases where no birth date was given on the mother's questionnaire. (This represented 85 cases among white births and 12 cases among black births.) The remaining 2.5 percent of white and 4.1 percent of black cases fall into one of the following two categories:

1. Reasonable matches
   - *a.* White—$N = 57$
   - *b.* Black—$N = 4$

   These are discrepancies arising from survey dates differing by 1 day or 1 month (not an unlikely event when month is entered as a number—1 through 12—rather than by name—January through December) and from coding errors (February 29 was miscoded on the birth certificate portion of the record).
2. Nonmatches
   - *a.* White—$N = 74$
   - *b.* Black—$N = 13$

   About one-fourth of the nonmatches among white births and one-half of the nonmatches among black births may have resulted from the mother not including the sampled birth in the pregnancy history section of the questionnaire.

Adding the reasonable matches to the true matches raises the agreement levels to 98.6 percent among delivery dates for white infants and to 96.8 percent among delivery dates for black infants.

Pregnancy history

The mother's pregnancy history data are derived from various items on the mother's questionnaire. Omissions on the questionnaire could have resulted from nonreporting of miscarriages, stillbirths, or induced abortions; discrepancies with the birth certificate could have arisen from problems of definition—for example, fetal death versus death after moments of birth. These decisions (on definitions and omissions) can vary not only among physicians completing the birth certificate but among mothers as well. To assure data as comparable as possible, the following additional cases were excluded from analyses of pregnancy history items: When the delivery date on the birth certificate did not equal the delivery date of the sampled birth (to assure that cases with outcomes subsequent to the sampled event and cases with no date given on questionnaire were omitted); when the outcome of the sampled event was not defined on the mother's questionnaire as a live birth; and for the few cases ($N = 11$) where the birth certificate indicated a single birth and the survey indicated a multiple birth.

Live birth order

Live birth order is computed from the birth certificate item on number of previous live births. It also appears on the detailed pregnancy history part of the mother's questionnaire (mail and telephone). For single births, overall agreement between the two sources was 97.6 percent for white mothers and 93.6 percent for black mothers. Agreement was highest for first and second births (table F). For live birth orders three or higher, the survey was more likely to understate the number of live births relative to the birth certificate. Among white births, for example, at live birth orders four and five or higher, about 6 and 9 percent were classified by the survey as lower live birth orders. The marginal distributions from both sources were very similar (table 7). The effective nonresponse rates for white and black mothers are 21.9 and 40.9 percent, respectively.

Prior fetal loss

The number of prior fetal deaths is derived from the birth certificate item on terminations before and after 20 weeks of gestation, including spontaneous and induced terminations. In 1980, seven States and the District of Columbia did not require this separate reporting and hence are omitted from the table. Prior fetal deaths are also part of the detailed pregnancy history section of the mother's questionnaire (mail and telphone). The mother's questionnaire requests separate information on stillbirths, miscarriages, and abortions so that the analyst can define fetal deaths by any combination of these three outcomes. Data from the birth certificate do not permit this level of detail; gestation of 20 weeks is the only indication of type of fetal loss. Reporting appears to have been slightly more complete on the mother's questionnaire for all fetal losses but not for stillbirths (table G).

Agreement on the total number of fetal losses was not very high. While 92.1 percent of white mothers and 88.4 percent of black mothers agreed that they had no prior fetal losses, agreement on one or more losses was only 83.8 percent for white mothers and 72.7 percent for black mothers (table H). There

Table F. Live birth order given as percent of cases from the mother's questionnaire in agreement with the birth certificate by race of mother: 1980

Live birth order on birth certificate	*White*	*Black*
	Percent	
All live births	97.6	93.6
1st live birth	98.8	95.8
2d live birth	98.1	96.9
3d live birth	96.3	86.6
4th live birth	91.9	*87.1
5th or higher live birth	91.1	*96.7

NOTE: National Natality Survey data are from the mail and telephone versions of the mother's questionnaire.

Table G. Proportion of prior fetal deaths from the birth certificate and the mother's questionnaire by race of mother: 1980

Source of data and type of fetal loss	*White*	*Black*
Birth certificate	Percent	
1 or more prior fetal deaths	19.9	26.4
1 or more terminations after 20 weeks	3.2	6.2
Mother's questionnaire		
1 or more prior fetal deaths (including abortions, miscarriages, and stillbirths)	23.1	27.7
1 or more miscarriages or stillbirths	16.7	19.5
1 or more stillbirths	2.1	5.8

NOTES: Data from Connecticut, Delaware, Louisiana, Minnesota, North Carolina, Oklahoma, Texas, and the District of Columbia are excluded because the information is not gathered on the birth certificates in these States.

National Natality Survey data are from the mail and telephone versions of the mother's questionnaire.

Table H. Prior fetal deaths given as percent of cases from the mother's questionnaire in agreement with the birth certificate by race of mother: 1980

All fetal deaths on birth certificate	*White*	*Black*
	Percent	
None	92.1	88.4
1 or more prior fetal deaths	83.8	72.7
1 prior fetal death	75.4	58.5
2 or more prior fetal deaths	84.5	*66.7

NOTES: Data from Connecticut, Delaware, Louisiana, Minnesota, North Carolina, Oklahoma, Texas, and the District of Columbia are excluded because the information is not gathered on the birth certificates in these States.

National Natality Survey data are from the mail and telephone versions of the mother's questionnaire.

was very little agreement on the exact number of prior fetal deaths (table 8). The effective nonresponse rates are 21.3 percent for white mothers and 41.9 percent for black mothers.

Outcome of last pregnancy

Outcome of last pregnancy is derived from dates of last live birth or fetal death on the birth certificates of 48 States and the District of Columbia. The mother's questionnaire (mail and telephone versions) was used for comparison. There was

Table J. Outcome of last pregnancy given as percent of cases from the mother's questionnaire in agreement with the birth certificate by race of mother: 1980

Outcome of last pregnancy on birth certificate	*White*	*Black*
	Percent	
No previous pregnancy	91.8	85.7
Live birth	96.6	94.9
Other	83.3	*79.3

NOTES: Data from Louisiana and Texas are excluded because the information is not gathered on the birth certificates in these States.

National Natality Survey data are from the mail and telephone versions of the mother's questionnaire.

very high agreement for the live birth category (96.6 percent for white mothers and 94.9 percent for black mothers), but a much lower level of agreement for the nonlive ("other") birth outcome (83.3 percent for white mothers and 79.3 percent for black mothers (tables J and 9)). These "other" outcomes are detailed on the questionnaire as miscarriage, stillbirth, and abortion. About 92 percent of white females and 86 percent of black females agreed on "no previous pregnancy." Some of the disagreement may be a result of failure to include early terminations of prior pregnancies. The effective nonresponse rates are 27.9 and 49.6 percent for white and black mothers, respectively.

Outcome measures

Birth weight

Birth weight was obtained from the birth certificate and the hospital questionnaire. Overall agreement for white and black single births was 97.3 and 96.2 percent, respectively, in 500-gram categories from less than 500 to 4,500 grams and over (table 10). Using three categories (less than 1,500, 1,500–2,499, and 2,500 grams or more) discrepancies were slightly greater in the low-birth-weight groups among white births although the lowest level of agreement was still 97.3 percent (in the less than 1,500-gram group). Among black births the less than 1,500-gram group showed more discrepancies than the other two groups. There were virtually no differences by marital status for either race (table K). The effective nonresponse rates for white and black births are 23.9 and 33.6 percent, respectively.

Gestation

Gestation was obtained from the birth certificates of 48 States and the District of Columbia. The survey's estimates come from the hospital questionnaire. For live births, gestation on the birth certificate is computed as the number of completed weeks between date of birth and date of last menstrual period. On the hospital questionnaire gestation was not computed but was estimated either by knowledge of the woman's last menstrual period or by a physician's examination of the newborn. (Approximately two-thirds of the cases were estimated by last menstrual period.) The actual date of the last menstrual period was not ascertained on the questionnaire. These two methods of obtaining gestation—computation and estimation—produce very different estimates of the length of pregnancy. The marginal distributions of gestation based on the birth certificate and the hospital questionnaire are not similar, even after limiting the comparison to survey data that were estimated based on last menstrual period.

Because gestation is particularly important in distinguishing between term and preterm low birth weight, gestation was analyzed by birth weight. Among white infants the marginal distributions by gestation are given in table L. Note that compared with the birth certificate, the hospital questionnaire shows considerable heaping at 36 and at 40 weeks. This poses a serious problem for using gestation data not computed from the last menstrual period.

To estimate the agreement between the birth certificate and hospital questionnaire on the proportion of preterm and term low-birth-weight infants, consideration must be given to the hospital questionnaire's heaping at 36 weeks. First, if it is assumed that for the preterm (less than 37 weeks) low-birth-weight white infants as recorded on the birth certificate ($N = 398$) all of the hospital estimates at 36 weeks were truly preterm (the "best" situation), then agreement would be 89.7 percent (table M). If, however, all of those at 36 weeks were, in fact, 37 weeks or more of gestation (the "worst" situation), agreement would drop to 73.9 percent. Probably the "true" estimate lies somewhere between. Similarly, for the term (37 weeks or more) low-birth-weight white infants based on the birth certificate ($N = 255$), agreement ranges from a high of 87.5 percent (36 weeks or more based on the hospital questionnaire) to a low of 72.6 percent (37 weeks or more based on the hospital questionnaire). Similar proportions can be observed for gestation of black infants (tables M and 11).

Apart from the two States that did not report gestation, relatively high proportions of white and black low-birth-weight

Table K. Birth weight given as percent of cases from the hospital questionnaire in agreement with the birth certificate by race and marital status of mother: 1980

Birth weight on birth certificate	White			Black		
	Total	Married	Not married	Total	Married	Not married
	Percent					
Total	99.4	99.5	98.4	98.5	99.1	98.2
Less than 1,500 grams	97.3	99.1	*90.9	94.0	*100.0	*90.0
1,500–2,499 grams	97.5	97.7	96.4	96.5	95.9	96.8
2,500 grams or more	99.7	99.8	99.4	99.7	100.0	99.3

NOTES: National Natality Survey data are from the hospital questionnaire.

Totals are for grouped data.

Table L. Percent distribution of low- and normal-weight white births by weeks of gestation, according to source of data: 1980

Gestation	Low birth weight		Normal birth weight	
	Birth certificate	Hospital questionnaire	Birth certificate	Hospital questionnaire
	Percent distribution			
Total	100.0	100.0	100.0	100.0
Less than 32 weeks	19.3	16.1	0.4	0.1
32–35 weeks	32.0	33.8	2.4	1.1
36 weeks	9.6	15.5	2.3	3.9
37–39 weeks	25.4	22.1	35.2	28.1
40 weeks	5.7	9.8	24.0	46.6
41 weeks and over	8.0	2.8	35.7	20.0

NOTE: Data from Connecticut and New Mexico are excluded because the information is not gathered on the birth certificates in these States.

Table M. Gestation given as percent distribution of cases from the hospital questionnaire for low-birth-weight infants (less than 2,500 grams), according to race of mother and gestation on the birth certificate: 1980

Race of mother and gestation on birth certificate	Number	Gestation on hospital questionnaire					
		Total	Less than 36 weeks	36 weeks	37–39 weeks	40 weeks	41 weeks or more
White		Percent distribution					
Less than 37 weeks	398	100.0	73.9	15.8	8.0	2.3	-
37 weeks or more	255	100.0	12.5	14.9	43.9	21.6	7.1
Black							
Less than 37 weeks	137	100.0	72.3	16.8	9.5	1.5	-
37 weeks or more	89	100.0	14.6	6.7	55.1	20.2	3.4

NOTES: Data from Connecticut and New Mexico are excluded because the information is not gathered on the birth certificates in these States.

National Natality Survey data are from the hospital questionnaire.

The birth certificate and the hospital questionnaire agreed on birth weight.

cases (23 and 29 percent, respectively) were missing data on gestation from the birth certificate. As a result, the effective nonresponse rates are quite high, about 56 percent for white and black respondents.

Apgar scores

Named after Virginia Apgar, M.D., Apgar scores are an evaluation of an infant at 1 and 5 minutes after birth. Five indicators are scored: Heart rate, respiratory effort, muscle tone, reflex irritability, and color. Each factor is assigned a value from 0–2. The overall score is the sum of the five values. In general, a score of 7–10 is considered satisfactory, 4–6 indicates that the infant is moderately depressed, and 0–3 that the infant may require emergency procedures for survival.

Scores were obtained from the birth certificates of 44 States for 1-minute scores, from 43 States and the District of Columbia for 5-minute scores, and from the hospital questionnaire. Overall agreement levels for ungrouped scores were about the same for white and black births regardless of marital status, about 93 percent for the 1-minute score and 95 percent for the 5-minute score. Overall, agreement for grouped scores (0–3, 4–6, and 7–10) was considerably higher, 98–99 percent. Agreement levels for scores in the 4–6 range, however, were generally somewhat lower than for scores in the 7–10 range, regardless of race or marital status (table N).

Both the birth certificate and the hospital questionnaire showed that three-fourths of the 1-minute scores for white infants were in the 8–9 range compared with two-thirds of the black 1-minute scores. At 5 minutes about 86 percent of white scores versus about 80 percent of black scores were in the 9–10 range. For both the 1- and 5-minute Apgars, scores in the midrange according to the birth certificate were somewhat overstated on the questionnaire (table 12). The effective nonresponse rates are about 26 percent for white respondents and 38 percent for black respondents.

Table N. 1- and 5-minute Apgar scores given as percent of cases from the hospital questionnaire in agreement with the birth certificate by race and marital status of mother: 1980

Apgar score	White			Black		
	Total	Married	Not married	Total	Married	Not married
			Percent			
1 minute						
Total	98.8	98.9	98.6	97.7	97.7	97.8
0–3	97.2	96.7	*100.0	*95.2	*87.5	*100.0
4–6	94.7	94.3	*97.6	90.0	*96.4	86.5
7–10	99.3	99.3	98.7	98.8	98.4	99.0
5 minute						
Total	99.4	99.5	98.6	99.5	99.3	99.6
0–3	94.4	*96.4	*87.5	*95.0	*87.5	*100.0
4–6	91.6	91.2	*93.3	*90.9	*100.0	*86.7
7–10	99.6	99.7	99.0	99.9	99.7	100.0

NOTES: For 1-minute Apgar scores, data from California, Delaware, Louisiana, Minnesota, Oklahoma, Texas, and the District of Columbia are excluded because the information is not gathered on the birth certificates in these States. For 5-minute Apgar scores, data from these States plus Connecticut are excluded; however, data from the District of Columbia are included.

Totals are for grouped data.

National Natality Survey data are from the hospital questionnaire.

Prenatal care

Data on trimester prenatal care began are derived from the birth certificate and from the mother's questionnaire (mail version only). The question of when prenatal care began is a difficult one to assess. There is no way to determine which source of information—the mother's questionnaire or birth certificate—is likely to be more accurate. First, hospitals seem to vary in their practices of obtaining this information for the birth certificate. Second, a mother may recall the date she went for her first visit but may not know whether that was, for example, her third or fourth month of pregnancy. Finally, the mother's medical records (from her physician or from the hospital) may not show all of her visits, especially if she changed physicians during her pregnancy.

Although there was an overall 88 percent agreement among white mothers between the birth certificate and the mother's questionnaire on trimester prenatal care began, the overriding tendency was for the mother to state care beginning earlier than was indicated by the birth certificate (table 13). Agreement for first trimester care was very high (95.6 percent); however, agreement for the second and third trimesters was considerably lower (39.0 and 32.3 percent, respectively) (table O). More than half of these white mothers indicated on the questionnaire that care began in the first trimester as opposed to the second and third trimesters indicated on the birth certificate. The net effect was that 87 percent of the white mothers indicated first trimester on the birth certificate versus 91 percent of the white mothers on the questionnaire. About 2 percent of the birth certificates did not have information on when prenatal care began.

Table O. Trimester prenatal care began given as percent of cases from the mother's questionnaire in agreement with the birth certificate by race of mother: 1980

Trimester on birth certificate	*White*	*Black*
	Percent	
Total	88.0	70.0
1st trimester	95.6	81.4
2d trimester	39.0	*38.3
3d trimester or no care	32.3	*28.6

NOTES: National Natality Survey data are from the mail version of the mother's questionnaire.

Totals are for grouped data.

Although the agreement levels were consistently lower among black mothers, they were in the same direction as among white mothers. Overall agreement was 70.0 percent, with 81.4 percent agreeing on first trimester care (table O). Second and third trimester agreement was very low. On the birth certificate and on the mother's questionnaire 74 percent of black mothers stated care began in the first trimester (table 13). The effective nonresponse rates are very high, 44.4 percent for white mothers and 68.0 percent for black mothers.

Discussion

Based on respondents to the 1980 National Natality Survey (NNS), the reliability of the data recorded on the birth certificates varies for different items. Overall, agreement between the birth certificate and the mother's questionnaire was very high for most items. However, agreement levels were generally higher for white respondents than for black respondents.

In addition, the reliability of the variables concerning pregnancy history is not entirely certain given the definitional problems surrounding reporting of early terminations of pregnancy. This is clearly seen in the discussion of outcome of the last pregnancy when agreement levels for nonlive birth outcomes were relatively low.

On the whole, marginal distributions of most variables were similar for the survey items and for items from the birth certificate. This would bode well for analyses of general trends in natality characteristics based on birth certificate data. However, as has been discussed, agreement for individual items or variables is not nearly as complete. Although this could lead to biases in assessing relationships among specific variables, the following example suggests that the problem may not be too serious. Consider the effects of education and live birth order on the use of early prenatal care (three variables for which disagreement was relatively high) among white women 20 years of age and over. Table P shows that although the proportion with early care is higher based on the NNS, the patterns are similar. Women with live birth order of two or more have lower use compared with women with live birth order one. Use of early care also increases with increasing education.

The only major difference between the two data sources is that for live birth order one, the NNS shows a big decrease between 12 and less than 12 years of education while the birth certificate shows no difference between these groups. The live birth order one, under 12 years of education group, however, is rather unusual in that it shows no difference between birth certificate and NNS even though all the other groups show higher use on NNS. Furthermore, the value of 90 percent with early care is rather high when compared with tabulation of all 1980 birth certificates for white married mothers 20 years of age and over with less than a high school education having their first live birth, which show 77 percent with early care. This anomaly is probably just the result of the small numbers involved in the NNS (37 mothers).

Table P. Percent of white married women 20 years of age and over beginning prenatal care in the 1st trimester of pregnancy, by birth order, education, and source of data: 1980

Birth order and education	*Birth certificate*	*National Natality Survey*
Live birth order 1	Percent[1]	
0–12 years	90.3	90.5
12 years	90.2	97.1
13–15 years	93.6	96.4
16 years or more	93.5	96.8
Live birth order 2 or more		
0–12 years	69.6	78.0
12 years	84.8	89.9
13–15 years	87.4	93.3
16 years or more	92.0	94.9

[1]Based on weighted numbers.

The most serious limitation of this study involves nonresponse. The effective nonresponse rate for the items considered varied from 18 to 68 percent. Unfortunately it is difficult to determine whether the birth certificate information is less reliable among nonrespondents.

In 1980 a similar comparability report was published[4] based on the 1972 NNS. Although detailed comparisons with that report cannot be made, primarily because questionnaire wording differed, some comparisons are worth noting:

- Agreement rates for ages of mother and father were similar.
- Similar problems on the question of education were noted with particular reference to grades 12 and 13–15. Grouped data showed similar agreement levels except that agreement for black mothers was higher in 1980 than in 1972.
- Live-birth-order agreement levels were consistently high.
- Birth-weight agreement within 500-gram intervals was similar for white respondents (97 percent) but was higher for black respondents in 1980 (96 percent) than in 1972 (91 percent).

[4]National Center for Health Statistics, L. J. Querec: Comparability of reporting between the birth certificate and the National Natality Survey. *Vital and Health Statistics.* Series 2, No. 83. DHEW Pub. No. (PHS) 80–1357. Public Health Service, Washington. U.S. Government Printing Office, Apr. 1980.

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Table 1. Comparability of mother's race as reported on the birth certificate and the mother's questionnaire: 1980

Race on birth certificate	Race on mother's questionnaire					
	All races	White	Black	American Indian or Alaskan Native	Asian or Pacific Islander	Other
All races	5,883	5,093	404	101	132	153
White	5,323	5,084	11	75	22	131
Black	409	2	393	4	4	6
Indian	31	5	-	21	2	3
Asian or Pacific Islander	118	1	-	1	104	12
Chinese	19	-	-	-	19	-
Japanese	13	-	-	-	11	2
Filipino	25	-	-	-	21	4
Other	61	1	-	1	53	6
Other	2	1	-	-	-	1

NOTE: National Natality Survey data are from the mail and telephone versions of the mother's questionnaire.

Table 2. Comparability of father's race as reported on the birth certificate and the mother's questionnaire: 1980

Race on birth certificate	Race on mother's questionnaire					
	All races	White	Black	American Indian or Alaskan Native	Asian or Pacific Islander	Other
All races	5,820	4,973	411	120	129	187
White	5,251	4,959	9	89	26	168
Black	424	7	402	6	4	5
Indian	32	4	-	24	4	-
Asian or Pacific Islander	112	2	-	1	95	14
Chinese	20	-	-	-	20	-
Japanese	14	1	-	-	10	3
Filipino	19	-	-	-	14	5
Hawaiian	3	1	-	-	2	-
Other	56	-	-	1	49	6
Other	1	1	-	-	-	-

NOTE: National Natality Survey data are from the mail and telephone versions of the mother's questionnaire.

Table 3. Comparability of mother's age as reported on the birth certificate and the mother's questionnaire by race of mother: 1980

Race and age on birth certificate	Age on mother's questionnaire						
	All ages	Under 20 years	20–24 years	25–29 years	30–34 years	35–39 years	40 years and over
White							
All ages	5,377	445	1,742	1,940	993	225	32
Under 20 years	446	442	4	-	-	-	-
20–24 years	1,743	2	1,731	8	1	-	1
25–29 years	1,935	1	5	1,927	1	1	-
30–34 years	992	-	2	4	985	1	-
35–39 years	229	-	-	1	5	223	-
40 years and over	32	-	-	-	1	-	31
Black							
All ages	420	35	140	139	76	27	3
Under 20 years	37	35	1	1	-	-	-
20–24 years	140	-	138	2	-	-	-
25–29 years	137	-	1	135	1	-	-
30–34 years	76	-	-	-	75	1	-
35–39 years	27	-	-	1	-	26	-
40 years and over	3	-	-	-	-	-	3

NOTE: National Natality Survey data are from the mail and telephone versions of the mother's questionnaire.

Table 4. Comparability of father's age as reported on the birth certificate and the mother's questionnaire by race of father: 1980

Race and age on birth certificate	Age on mother's questionnaire					
	All ages	Under 20 years	20–24 years	25–29 years	30–34 years	35 years and over
White						
All ages	3,807	88	835	1,442	969	473
Under 20 years	88	86	2	-	-	-
20–24 years	833	2	823	6	-	2
25–29 years	1,442	-	10	1,425	4	3
30–34 years	974	-	-	10	959	5
35 years and over	470	-	-	1	6	463
Black						
All ages	240	7	52	89	49	43
Under 20 years	6	6	-	-	-	-
20–24 years	53	1	48	4	-	-
25–29 years	88	-	2	84	1	1
30–34 years	52	-	2	1	47	2
35 years and over	41	-	-	-	1	40

NOTE: National Natality Survey data are from the mail version of the mother's questionnaire.

Table 5. Comparability of mother's education as reported on the birth certificate and the mother's questionnaire by race of mother: 1980

Race and education on birth certificate	Education on mother's questionnaire							
	Total	0–8 years	9–11 years	12 years	13 years	14 years	15 years	16 years or more
White								
Total	4,369	90	517	2,085	362	382	130	803
0–8 years	85	64	15	4	-	-	-	2
9–11 years	504	14	439	46	3	1	-	1
12 years	2,029	11	62	1,841	68	20	4	23
13 years	428	1	-	139	244	38	4	2
14 years	369	-	-	33	31	283	18	4
15 years	140	-	-	14	8	27	83	8
16 years or more	814	-	1	8	8	13	21	763
Black								
Total	350	16	49	153	25	29	18	60
0–8 years	12	10	1	1	-	-	-	-
9–11 years	52	4	40	8	-	-	-	-
12 years	160	2	8	134	5	2	1	8
13 years	23	-	-	8	15	-	-	-
14 years	37	-	-	1	5	22	8	1
15 years	11	-	-	1	-	3	7	-
16 years or more	55	-	-	-	-	2	2	51

NOTES: Data from California, Texas, and Washington are excluded because the information is not gathered on the birth certificates in these States.

National Natality Survey data are from the mail and telephone versions of the mother's questionnaire.

Table 6. Comparability of father's education as reported on the birth certificate and the mother's questionnaire by race of father: 1980

Race and education on birth certificate	Total	Education on mother's questionnaire						
		0–8 years	9–11 years	12 years	13 years	14 years	15 years	16 years or more
White								
Total	4,312	116	465	1,752	239	463	152	1,125
0–8 years	111	83	17	9	-	1	-	1
9–11 years	431	17	363	48	1	1	-	1
12 years	1,765	13	76	1,533	68	50	5	20
13 years	289	-	3	90	132	59	2	3
14 years	442	1	3	55	37	287	41	18
15 years	152	2	1	7	1	45	76	20
16 years or more	1,122	-	2	10		20	28	1,062
Black								
Total	344	15	61	151	18	29	15	55
0–8 years	12	7	2	2	-	-	-	1
9–11 years	59	5	46	7	-	-	-	1
12 years	165	3	13	131	8	5	1	4
13 years	16	-	-	5	6	4	1	-
14 years	29	-	-	6	3	13	5	2
15 years	9	-	-	-	-	3	4	2
16 years or more	54	-	-	-	1	4	4	45

NOTES: Data from California, Texas, and Washington are excluded because the information is not gathered on the birth certificates in these States.

National Natality Survey data are from the mail and telephone versions of the mother's questionnaire.

Table 7. Comparability of live birth order as reported on the birth certificate and the mother's questionnaire by race of mother: 1980

Race and live birth order on birth certificate	All live births	Live birth order on mother's questionnaire				
		1st live birth	2d live birth	3d live birth	4th live birth	5th or higher live birth
White						
All live births	5,161	2,158	1,801	799	246	157
1st live birth	2,168	2,142	20	6	-	-
2d live birth	1,792	12	1,758	20	2	-
3d live birth	785	3	19	756	7	-
4th live birth	248	1	2	13	228	4
5th or higher live birth	168	-	2	4	9	153
Black						
All live births	388	114	136	78	30	30
1st live birth	118	113	4	1	-	-
2d live birth	127	1	123	3	-	-
3d live birth	82	-	9	71	2	-
4th live birth	31	-	-	3	27	1
5th or higher live birth	30	-	-	-	1	29

NOTE: National Natality Survey data are from the mail and telephone versions of the mother's questionnaire.

Table 8. Comparability of prior fetal deaths as reported on the birth certificate and the mother's questionnaire by race of mother: 1980

Race and prior fetal deaths on birth certificate	Prior fetal deaths on mother's questionnaire					
	Total	None	1 or more	1	2	3 or more
White						
Total	4,347	3,345	1,002	717	189	96
None	3,481	3,205	276	221	42	13
1 or more prior fetal deaths	866	140	726	496	147	83
1 prior fetal death	646	115	531	487	36	8
2 prior fetal deaths	153	23	130	8	107	15
3 or more prior fetal deaths	67	2	65	1	4	60
Black						
Total	292	211	81	54	20	7
None	215	190	25	19	4	2
1 or more prior fetal deaths	77	21	56	35	16	5
1 prior fetal death	53	17	36	31	5	-
2 or more prior fetal deaths	24	4	20	4	11	5

NOTES: Data from Connecticut, Delaware, Louisiana, Minnesota, North Carolina, Oklahoma, Texas, and the District of Columbia are excluded because the information is not gathered on the birth certificates in these States.

National Natality Survey data are from the mail and telephone versions of the mother's questionnaire.

Table 9. Comparability of outcome of last pregnancy as reported on the birth certificate and the mother's questionnaire by race of mother and live birth order: 1980

Race, outcome, and live birth order on birth certificate	Outcome on mother's questionnaire					
	All outcomes	No previous pregnancy	Live birth	Miscarriage	Stillbirth	Abortion
WHITE						
All outcomes	4,349	1,574	2,229	316	45	185
No previous pregnancy	1,674	1,537	15	29	3	90
Live birth	2,249	7	2,173	43	4	22
Other	426	30	41	244	38	73
Live birth order 1						
All outcomes	1,882	1,567	19	136	22	138
No previous pregnancy	1,674	1,537	15	29	3	90
Other	208	30	4	107	19	48
Live birth order 2 or more						
All outcomes	2,467	7	2,210	180	23	47
Live birth	2,249	7	2,173	43	4	22
Other	218	-	37	137	19	25
BLACK						
All outcomes	281	67	173	21	3	17
No previous pregnancy	77	66	2	3	-	6
Live birth	175	-	166	3	1	5
Other	29	1	5	15	2	6
Live birth order 1						
All outcomes	90	67	2	10	2	9
No previous pregnancy	77	66	2	3	-	6
Other	13	1	-	7	2	3
Live birth order 2 or more						
All outcomes	191	-	171	11	1	8
Live birth	175	-	166	3	1	5
Other	16	-	5	8	-	3

NOTES: Data from Louisiana and Texas are excluded because the information is not gathered on the birth certificates in these States.

National Natality Survey data are from the mail and telephone versions of the mother's questionnaire.

Table 10. Comparability of birth weight as reported on the birth certificate and the hospital questionnaire by race of mother: 1980

Race and birth weight on birth certificate	Birth weight on hospital questionnaire										
	Total	Less than 500 grams	500–999 grams	1,000–1,499 grams	1,500–1,999 grams	2,000–2,499 grams	2,500–2,999 grams	3,000–3,499 grams	3,500–3,999 grams	4,000–4,499 grams	4,500 grams or more
White											
Total	5,718	9	48	89	177	604	695	1,920	1,509	567	100
Less than 500 grams	11	8	1	-	-	-	-	1	-	1	-
500–999 grams	46	-	45	1	-	-	-	-	-	-	-
1,000–1,499 grams	90	-	2	86	2	-	-	-	-	-	-
1,500–1,999 grams	182	-	-	1	173	4	1	2	1	-	-
2,000–2,499 grams	606	-	-	1	1	590	8	6	-	-	-
2,500–2,999 grams	696	-	-	-	-	7	673	15	-	1	-
3,000–3,499 grams	1,907	1	-	-	1	2	9	1,879	13	1	1
3,500–3,999 grams	1,551	-	-	-	-	-	4	17	1,490	39	1
4,000–4,499 grams	532	-	-	-	-	1	-	-	5	524	2
4,500 grams or more	97	-	-	-	-	-	-	-	-	1	96
Black											
Total	1,089	9	23	33	68	212	227	312	160	38	7
Less than 500 grams	9	9	-	-	-	-	-	-	-	-	-
500–999 grams	22	-	21	1	-	-	-	-	-	-	-
1,000–1,499 grams	36	-	2	30	3	-	1	-	-	-	-
1,500–1,999 grams	68	-	-	2	63	2	-	-	-	1	-
2,000–2,499 grams	217	-	-	-	2	208	6	-	-	-	1
2,500–2,999 grams	216	-	-	-	-	2	213	1	-	-	-
3,000–3,499 grams	315	-	-	-	-	-	7	306	2	-	-
3,500–3,999 grams	166	-	-	-	-	-	-	5	158	3	-
4,000–4,499 grams	34	-	-	-	-	-	-	-	-	34	-
4,500 grams or more	6	-	-	-	-	-	-	-	-	-	6

Table 11. Comparability of gestation as reported on the birth certificate and the hospital questionnaire, by race of mother and birth weight: 1980

Race and gestation on birth certificate	Gestation on hospital questionnaire									
	Total	Less than 20 weeks	20–27 weeks	28–31 weeks	32–35 weeks	36 weeks	37–39 weeks	40 weeks	41–42 weeks	43 weeks or more
LESS THAN 2,500 GRAMS[1]										
White										
Total	653	2	32	71	221	101	144	64	16	2
Less than 20 weeks	4	1	2	1	-	-	-	-	-	-
20–27 weeks	34	-	22	10	-	-	1	1	-	-
28–31 weeks	88	-	5	47	29	5	1	1	-	-
32–35 weeks	209	-	1	9	153	29	13	4	-	-
36 weeks	63	-	-	2	12	29	17	3	-	-
37–39 weeks	166	1	1	1	18	25	91	26	3	-
40 weeks	37	-	-	-	5	7	7	15	2	1
41–42 weeks	28	-	1	-	3	2	7	8	7	-
43 weeks or more	24	-	-	1	1	4	7	6	4	1
Black										
Total	226	2	15	25	70	29	62	20	3	-
Less than 20 weeks	1	-	1	-	-	-	-	-	-	-
20–27 weeks	20	2	11	2	3	1	1	-	-	-
28–31 weeks	29	-	1	17	8	1	2	-	-	-
32–35 weeks	66	-	-	5	44	8	8	1	-	-
36 weeks	21	-	-	1	4	13	2	1	-	-
37–39 weeks	57	-	1	-	8	4	37	7	-	-
40 weeks	12	-	-	-	1	-	3	6	2	-
41–42 weeks	13	-	-	-	2	1	5	4	1	-
43 weeks or more	7	-	1	-	-	1	4	1	-	-
2,500 GRAMS OR MORE[1]										
White										
Total	3,468	3	1	1	39	136	975	1,617	633	63
Less than 20 weeks	3	-	-	-	-	-	-	2	1	-
20–27 weeks	3	-	-	-	-	1	1	1	-	-
28–31 weeks	8	-	-	-	1	-	3	4	-	-
32–35 weeks	82	-	-	-	8	17	27	27	3	-
36 weeks	79	-	-	-	4	11	43	16	5	-
37–39 weeks	1,222	2	-	-	15	54	629	475	44	3
40 weeks	832	-	-	-	3	26	117	599	84	3
41–42 weeks	946	-	1	1	6	19	112	374	418	15
43 weeks or more	293	1	-	-	2	8	43	119	78	42
Black										
Total	477	-	-	1	7	30	158	199	71	11
Less than 20 weeks	-	-	-	-	-	-	-	-	-	-
20–27 weeks	2	-	-	-	-	-	1	1	-	-
28–31 weeks	4	-	-	1	1	1	-	1	-	-
32–35 weeks	25	-	-	-	3	4	13	5	-	-
36 weeks	15	-	-	-	-	5	5	4	1	-
37–39 weeks	187	-	-	-	2	7	98	70	8	2
40 weeks	106	-	-	-	1	7	11	71	15	1
41–42 weeks	98	-	-	-	-	5	16	34	40	3
43 weeks or more	40	-	-	-	-	1	14	13	7	5

[1]As defined on both the birth certificate and the hospital questionnaire.

NOTE: Data from Connecticut and New Mexico are excluded because the information is not gathered on the birth certificates in these States.

Table 12. Comparability of 1- and 5-minute Apgar scores as reported on the birth certificate and the hospital questionnaire by race of mother: 1980

Race and Apgar score on birth certificate	*Apgar score on hospital questionnaire*											
	Total	*0*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
1-MINUTE SCORE												
White												
Total	4,201	7	31	41	39	61	107	173	467	1,441	1,685	149
0	6	5	-	-	-	-	-	-	-	1	-	-
1	28	1	27	-	-	-	-	-	-	-	-	-
2	35	-	1	33	1	-	-	-	-	-	-	-
3	40	-	-	1	37	-	-	-	-	2	-	-
4	60	-	-	-	-	57	2	1	-	-	-	-
5	99	-	-	-	1	3	90	3	-	-	2	-
6	181	1	-	1	-	-	7	159	7	4	2	-
7	476	-	1	1	-	1	1	2	440	18	10	2
8	1,421	-	-	2	-	-	3	4	12	1,355	44	1
9	1,710	-	2	3	-	-	4	4	7	58	1,612	20
10	145	-	-	-	-	-	-	-	1	3	15	126
Black												
Total	797	3	10	18	10	8	30	44	100	240	301	33
0	3	3	-	-	-	-	-	-	-	-	-	-
1	11	-	10	-	1	-	-	-	-	-	-	-
2	20	-	-	18	-	-	-	2	-	-	-	-
3	8	-	-	-	8	-	-	-	-	-	-	-
4	11	-	-	-	1	8	-	-	1	-	1	-
5	27	-	-	-	-	-	25	-	1	1	-	-
6	42	-	-	-	-	-	-	39	1	1	1	-
7	99	-	-	-	-	-	2	1	91	3	2	-
8	247	-	-	-	-	-	2	1	3	227	14	-
9	302	-	-	-	-	-	1	1	3	8	282	7
10	27	-	-	-	-	-	-	-	-	-	1	26
5-MINUTE SCORE												
White												
Total	4,117	1	13	14	11	7	29	50	86	370	2,208	1,328
0	1	1	-	-	-	-	-	-	-	-	-	-
1	14	-	13	-	-	1	-	-	-	-	-	-
2	9	-	-	9	-	-	-	-	-	-	-	-
3	12	-	-	-	11	-	-	-	-	1	-	-
4	7	-	-	-	-	6	1	-	-	-	-	-
5	28	-	-	-	-	-	23	3	-	1	1	-
6	48	-	-	-	-	-	1	42	3	-	-	2
7	80	-	-	-	-	-	-	1	74	3	2	-
8	364	-	-	-	-	-	1	4	4	335	14	6
9	2,204	-	-	3	-	-	3	-	5	25	2,127	41
10	1,350	-	-	2	-	-	-	-	-	5	64	1,279
Black												
Total	788	-	8	6	5	3	9	9	26	87	411	224
1	8	-	8	-	-	-	-	-	-	-	-	-
2	6	-	-	6	-	-	-	-	-	-	-	-
3	6	-	-	-	5	-	-	-	-	1	-	-
4	2	-	-	-	-	2	-	-	-	-	-	-
5	11	-	-	-	-	1	9	-	-	-	-	1
6	9	-	-	-	-	-	-	8	-	-	1	-
7	26	-	-	-	-	-	-	1	22	2	-	1
8	86	-	-	-	-	-	-	-	1	77	8	-
9	413	-	-	-	-	-	-	-	3	7	394	9
10	221	-	-	-	-	-	-	-	-	-	8	213

NOTE: For 1-minute Apgar scores, data from California, Delaware, Louisiana, Minnesota, Oklahoma, Texas, and the District of Columbia are excluded because the information is not gathered on the birth certificates in these States. For 5-minute Apgar scores, data from these States plus Connecticut are excluded; however, data from the District of Columbia are included.

Table 13. Comparability of month prenatal care began as reported on the birth certificate and the mother's questionnaire by race of mother: 1980

Race and month care began on birth certificate	Month care began on mother's mail questionnaire										
	Total	1st month	2d month	3d month	4th month	5th month	6th month	7th month	8th month	9th month	No care
White											
Total	3,678	1,159	1,401	771	177	82	21	7	9	3	48
1st month	522	307	182	23	2	1	1	-	1	-	6
2d month	1,695	568	817	257	21	9	1	-	1	1	20
3d month	978	206	313	380	61	8	2	-	-	1	7
4th month	268	43	51	77	66	25	1	1	-	1	3
5th month	108	16	21	16	20	24	8	1	-	-	2
6th month	42	8	6	7	3	11	5	1	-	-	1
7th month	24	6	1	4	1	2	1	3	3	-	3
8th month	18	-	6	5	2	1	-	1	3	-	-
9th month	14	5	2	2	1	1	-	-	2	-	1
No care	9	-	2	-	-	-	2	-	-	-	5
Black											
Total	210	88	38	30	23	12	2	2	1	3	11
1st month	39	26	8	2	-	-	-	1	1	-	1
2d month	68	26	19	14	2	2	-	-	-	2	3
3d month	49	19	6	7	9	4	-	-	-	1	3
4th month	21	7	2	4	5	1	-	-	-	-	2
5th month	14	4	1	3	5	1	-	-	-	-	-
6th month	12	3	2	-	2	2	2	1	-	-	-
7th month	3	1	-	-	-	1	-	-	-	-	1
8th month	1	1	-	-	-	-	-	-	-	-	-
9th month	1	1	-	-	-	-	-	-	-	-	-
No care	2	-	-	-	-	1	-	-	-	-	1

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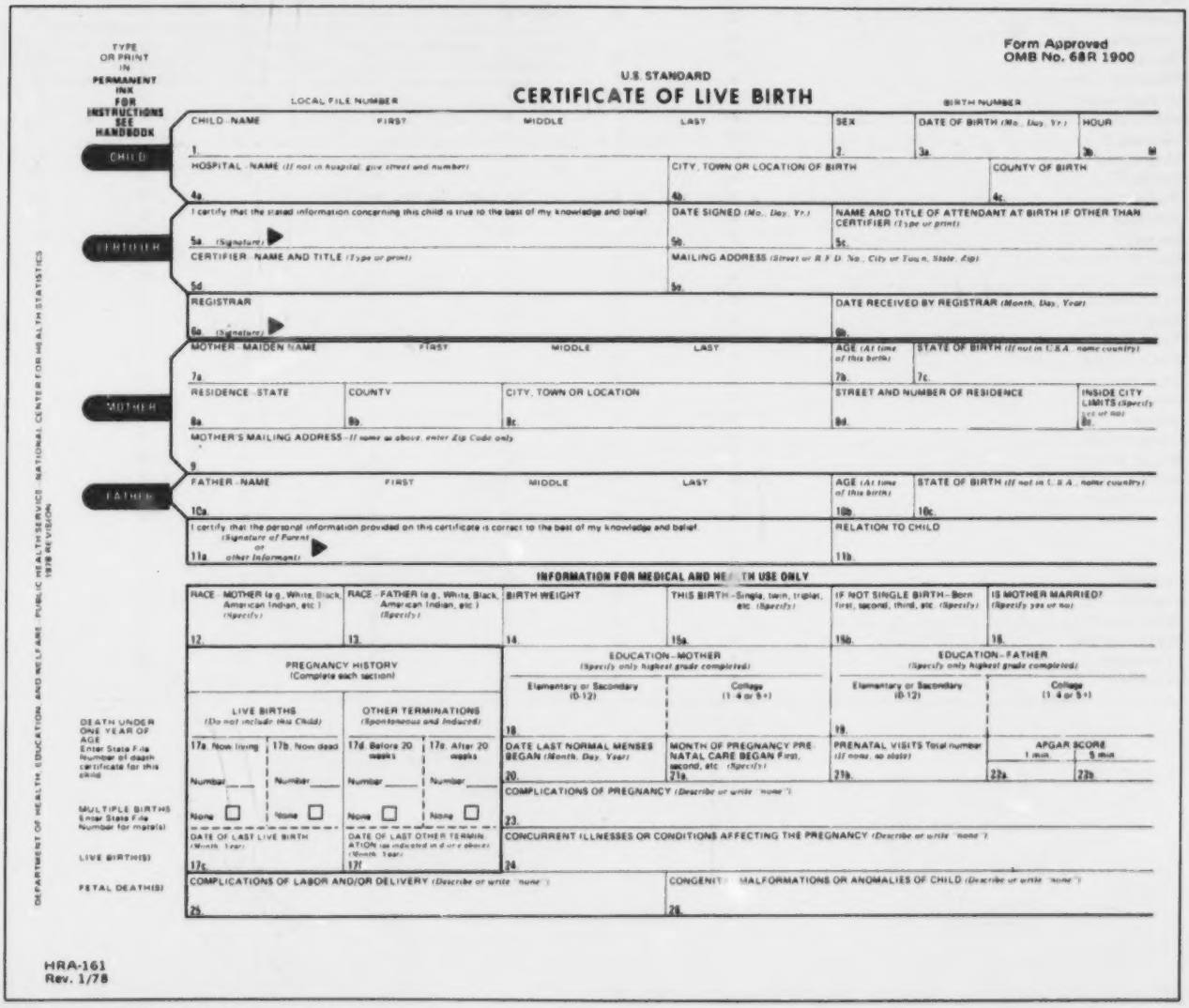
Appendix
Technical notes

A facsimile of the U.S. Standard Certificate of Live Birth (revised 1978) is shown in figure I. Table I shows the States that reported selected items on the birth certificate.

Table II indicates the effective nonresponse rates for individual variables on the birth certificate and on the mother's mail, mother's telephone, and hospital questionnaires.

Figures II and III are facsimiles of the National Natality Survey questionnaires used for comparison with the U.S. Standard Certificate of Live Birth. The telephone version of the mother's questionnaire is not shown separately, but the items that were asked on this version are indicated with a T. The complete hospital questionnaire is not shown; those portions relevant to this study are given.



TYPE OR PRINT IN PERMANENT INK FOR INSTRUCTIONS SEE HANDBOOK

Form Approved OMB No. 68R 1900

U.S. STANDARD

CERTIFICATE OF LIVE BIRTH

LOCAL FILE NUMBER — BIRTH NUMBER

CHILD

1. CHILD - NAME (First, Middle, Last) — 2. SEX — 3a. DATE OF BIRTH (Mo., Day, Yr.) — 3b. HOUR

4a. HOSPITAL - NAME (If not in hospital, give street and number) — 4b. CITY, TOWN OR LOCATION OF BIRTH — 4c. COUNTY OF BIRTH

CERTIFIER

I certify that the stated information concerning this child is true to the best of my knowledge and belief.

5a. (Signature) — 5b. DATE SIGNED (Mo., Day, Yr.) — 5c. NAME AND TITLE OF ATTENDANT AT BIRTH IF OTHER THAN CERTIFIER (Type or print)

5d. CERTIFIER - NAME AND TITLE (Type or print) — 5e. MAILING ADDRESS (Street or R.F.D. No., City or Town, State, Zip)

6a. REGISTRAR (Signature) — 6b. DATE RECEIVED BY REGISTRAR (Month, Day, Year)

MOTHER

7a. MOTHER - MAIDEN NAME (First, Middle, Last) — 7b. AGE (At time of this birth) — 7c. STATE OF BIRTH (If not in U.S.A., name country)

8a. RESIDENCE - STATE — 8b. COUNTY — 8c. CITY, TOWN OR LOCATION — 8d. STREET AND NUMBER OF RESIDENCE — 8e. INSIDE CITY LIMITS (Specify yes or no)

9. MOTHER'S MAILING ADDRESS - If same as above, enter Zip Code only

FATHER

10a. FATHER - NAME (First, Middle, Last) — 10b. AGE (At time of this birth) — 10c. STATE OF BIRTH (If not in U.S.A., name country)

I certify that the personal information provided on this certificate is correct to the best of my knowledge and belief.

11a. (Signature of Parent or other Informant) — 11b. RELATION TO CHILD

INFORMATION FOR MEDICAL AND HEALTH USE ONLY

12. RACE - MOTHER (e.g., White, Black, American Indian, etc.) (Specify)

13. RACE - FATHER (e.g., White, Black, American Indian, etc.) (Specify)

14. BIRTH WEIGHT

15a. THIS BIRTH - Single, twin, triplet, etc. (Specify)

15b. IF NOT SINGLE BIRTH - Born first, second, third, etc. (Specify)

16. IS MOTHER MARRIED? (Specify yes or no)

PREGNANCY HISTORY (Complete each section)

LIVE BIRTHS (Do not include this Child)

17a. Now living — Number ____

17b. Now dead — Number ____

OTHER TERMINATIONS (Spontaneous and Induced)

17d. Before 20 weeks — Number ____

17e. After 20 weeks — Number ____

17c. DATE OF LAST LIVE BIRTH (Month, Year)

17f. DATE OF LAST OTHER TERMINATION (as indicated in d or e above) (Month, Year)

EDUCATION - MOTHER (Specify only highest grade completed)

18. Elementary or Secondary (0-12) — College (1-4 or 5+)

EDUCATION - FATHER (Specify only highest grade completed)

19. Elementary or Secondary (0-12) — College (1-4 or 5+)

20. DATE LAST NORMAL MENSES BEGAN (Month, Day, Year)

21a. MONTH OF PREGNANCY PRENATAL CARE BEGAN First, second, etc. (Specify)

21b. PRENATAL VISITS Total number (If none, so state)

APGAR SCORE — 22a. 1 min. — 22b. 5 min.

23. COMPLICATIONS OF PREGNANCY (Describe or write "none")

24. CONCURRENT ILLNESSES OR CONDITIONS AFFECTING THE PREGNANCY (Describe or write "none")

25. COMPLICATIONS OF LABOR AND/OR DELIVERY (Describe or write "none")

26. CONGENITAL MALFORMATIONS OR ANOMALIES OF CHILD (Describe or write "none")

DEATH UNDER ONE YEAR OF AGE Enter State File Number of death certificate for this child

MULTIPLE BIRTHS Enter State File Number for mate(s)

LIVE BIRTH(S)

FETAL DEATH(S)

None ☐

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE - PUBLIC HEALTH SERVICE - NATIONAL CENTER FOR HEALTH STATISTICS 1978 REVISION

HRA-161
Rev. 1/78

Figure I. U.S. Standard Certificate of Live Birth

Table I. Areas reporting educational attainment of parents, dates of last live birth and fetal death, date last normal menstrual period began, other terminations before and after 20 weeks of gestation, marital status of mother, and 1- and 5-minute Apgar scores: Each State, 1980

Area	Educational attainment of parents	Dates of last live birth and fetal death	Date last normal menstrual period began	Other terminations before and after 20 weeks of gestation	Marital status of mother	1-minute Apgar score	5-minute Apgar score
Alabama	X	X	X	X	X	X	X
Alaska	X	X	X	X	X	X	X
Arizona	X	X	X	X	X	X	X
Arkansas	X	X	X	X	X	X	X
California		X	X	X			
Colorado	X	X	X	X	X	X	X
Connecticut	X	X				X	
Delaware	X	X	X		X		
District of Columbia	X	X	X		X		X
Florida	X	X	X	X	X	X	X
Georgia	X	X	X	X	X	X	X
Hawaii	X	X	X	X	X	X	X
Idaho	X	X	X	X	X	X	X
Illinois	X	X	X	X	X	X	X
Indiana	X	X	X	X	X	X	X
Iowa	X	X	X	X	X	X	X
Kansas	X	X	X	X	X	X	X
Kentucky	X	X	X	X	X	X	X
Louisiana	X		X		X		
Maine	X	X	X	X	X	X	X
Maryland	X	X	X	X		X	X
Massachusetts	X	X	X	X	X	X	X
Michigan	X	X	X	X		X	X
Minnesota	X	X	X		X		
Mississippi	X	X	X	X	X	X	X
Missouri	X	X	X	X	X	X	X
Montana	X	X	X	X		X	X
Nebraska	X	X	X	X	X	X	X
Nevada	X	X	X	X		X	X
New Hampshire	X	X	X	X	X	X	X
New Jersey	X	X	X	X	X	X	X
New Mexico	X	X		X	X	X	X
New York	X	X	X	X		X	X
North Carolina	X	X	X		X	X	X
North Dakota	X	X	X	X	X	X	X
Ohio	X	X	X	X		X	X
Oklahoma	X	X	X		X		
Oregon	X	X	X	X	X	X	X
Pennsylvania	X	X	X	X	X	X	X
Rhode Island	X	X	X	X	X	X	X
South Carolina	X	X	X	X	X	X	X
South Dakota	X	X	X	X	X	X	X
Tennessee	X	X	X	X	X	X	X
Texas			X				
Utah	X	X	X	X	X	X	X
Vermont	X	X	X	X	X	X	X
Virginia	X	X	X	X	X	X	X
Washington		X	X	X	X	X	X
West Virginia	X	X	X	X	X	X	X
Wisconsin	X	X	X	X	X	X	X
Wyoming	X	X	X	X	X	X	X

Table II. Effective nonresponse rates for individual variables by race: National Natality Survey, 1980

Variable	*Source of data*[1]	*White*	*Black*
Age of mother	M/T	18.7	36.0
Age of father	M	42.4	63.4
Education of mother[2]	M/T	18.0	37.1
Education of father[2]	M/T	19.1	38.1
Live birth order	M/T	21.9	40.9
Fetal loss[2]	M/T	21.3	41.9
Outcome of last pregnancy	M/T	27.9	49.6
Prenatal care	M	44.4	68.0
Birth weight	H	23.9	33.6
Gestation[2]	H	55.8	56.8
Apgar score:			
1 minute[2]	H	26.0	38.0
5 minute[2]	H	26.3	38.1

[1]M = mother's mail questionnaire; T = mother's telephone questionnaire; H = hospital questionnaire.
[2]The denominators of these rates exclude the number of cases in those States that did not collect this information on the birth certificate. See detailed tables for specific States.

NOTES: The effective nonresponse rates are based on the total number of potential respondents. From the mother's questionnaire there was a potential of 6,612 white and 656 black respondents. From the hospital questionnaire there was a potential of 7,509 white and 1,641 black respondents. The rate is defined as the number of item nonrespondents plus survey nonrespondents per 100 potential respondents (defined as nonrespondents plus respondents).

PHS-T489-4 (4/80) OMB Clearance No. 68-S-78027

M-CS

NOTE: A **T** in the left margin indicates that the question was included on the mother's telephone questionnaire.

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
OFFICE OF HEALTH RESEARCH, STATISTICS, AND TECHNOLOGY
NATIONAL CENTER FOR HEALTH STATISTICS
HYATTSVILLE, MARYLAND 20782

1980 NATIONAL NATALITY SURVEY

INFORMATION RESTRICTIONS. This survey is being conducted under the authority of the Public Health Service Act (42 USC 242k). The information you provide will be used for statistical purposes only. Any release of information or publication by the National Center for Health Statistics will in no way identify any individuals or any medical facilities participating in the survey. Your assistance is voluntary, and there is no penalty for declining to participate in whole or in part. Return of this questionnaire acknowledges your agreement to the uses the NCHS in the manner outlined above.

PART I: MEDICAL CARE DURING THE 12 MONTHS BEFORE DELIVERY

1a. T **Did you make any visits to a doctor or nurse for prenatal care (concerning your pregnancy) before your 1980 delivery?**

21 1 ☐ Yes → *Go to question 1b*
2 ☐ No → *Go to question 2*

b. How many visits for prenatal care did you make during each of the specified months of your pregnancy? If no visits were made during a particular month, enter a zero. *(PLEASE ESTIMATE AS BEST YOU CAN)*

_____ CC 22 23 visits during 1st month
_____ CC 24 25 visits during 2nd month
_____ CC 26 27 visits during 3rd month
_____ CC 28 29 visits during 4th month
_____ CC 30 31 visits during 5th month
_____ CC 32 33 visits during 6th month
_____ CC 34 35 visits during 7th month
_____ CC 36 37 visits during 8th month
_____ CC 38 39 visits during 9th month and thereafter (prenatal only)

2a. T **Did your doctor suggest that you limit your total weight gain during your recent pregnancy?**

40 1 ☐ Yes → *Go to question 2b*
2 ☐ No → *Go to question 3*

b. What limit in total weight gain did the doctor suggest?

T _____ CC 41 42 lb. gain

PART II. CHARACTERISTICS BEFORE AND AFTER DELIVERY

3. During your recent pregnancy, did you do any of the following:

	Yes, based on doctor's or other medical source's suggestion	Yes, based on own decision without consulting doctor or other medical source	NO
a take a vitamin/mineral supplement? *(Check one box only)* → 43 1	☐	2 ☐	3 ☐
b restrict your calorie intake? *(Check one box only)* → 44 1	☐	2 ☐	3 ☐
c restrict your salt intake? *(Check one box only)* → 45 1	☐	2 ☐	3 ☐
d use diuretics (fluid or water pills) to help eliminate water? *(Check one box only)* → 46 1	☐	2 ☐	3 ☐

PLEASE DO NOT WRITE IN THIS AREA FOR OFFICE USE ONLY

M-CS

Figure II. Mother's mail questionnaire, 1980 National Natality Survey

4. How many weeks pregnant were you when you first found out that you were definitely pregnant?

T _____ weeks
CC 47-48

5. Did you smoke cigarettes at all during the 12 months before your 1980 delivery?

T
49 1 ☐ Yes → *Go to question 6a*
2 ☐ No → *Go to question 8a*

6a. On the average, how many cigarettes did you smoke PER DAY before you found out that you were pregnant?

_____ average number of cigarettes per day
CC 50-51

b. What one brand of cigarettes did you smoke most often?

_____ brand
CC 52-54

c. Cigarette type most often smoked? *(Check one box)*
55 1 ☐ Filter Tip or 2 ☐ Non-filter

d. Pack type most often smoked? *(Check one box)*
56 1 ☐ Hard Pack or 2 ☐ Soft Pack

e. Tobacco type most often smoked? *(Check one box)*
57 1 ☐ Menthol or 2 ☐ Regular

f. Cigarette size most often smoked? *(Check one box)*
58 1 ☐ Regular length or 2 ☐ King Size
or
3 ☐ 100 or 120 millimeters

7a. On the average, how many cigarettes did you smoke PER DAY after you found out that you were pregnant? *(Write in a zero if you did not smoke any, and go to question 8a.)*

T _____ average number of cigarettes per day
CC 59-60

b. What one brand of cigarettes did you smoke most often?

_____ brand
CC 61-63

c. Cigarette type most often smoked? *(Check one box)*
64 1 ☐ Filter tip or 2 ☐ Non filter

d. Pack type most often smoked? *(Check one box)*
65 1 ☐ Hard Pack or 2 ☐ Soft Pack

e. Tobacco type most often smoked? *(Check one box)*
66 1 ☐ Menthol or 2 ☐ Regular

f. Cigarette size most often smoked? *(Check one box)*
67 1 ☐ Regular length or 2 ☐ King Size
or
3 ☐ 100 or 120 millimeters

8a. Did you drink any alcoholic beverages (beer, wine or liquor) during the 12 months before your 1980 delivery?

T
68 1 ☐ Yes → *Go to question 8b*
2 ☐ No → *Go to question 9*

8b. How often did you usually drink alcoholic beverages; that is beer, wine, and/or liquor? *(Check one box for before and one box for during pregnancy.)* Choose the answer that comes closest.

T

	(Check one box this column) BEFORE PREGNANCY	*and*	*(Check one box this column)* DURING PREGNANCY
69 70 01	☐ Everyday		71 72 01 ☐
02	☐ Nearly everyday		02 ☐
03	☐ 3 or 4 days a week		03 ☐
04	☐ 1 or 2 days a week		04 ☐
05	☐ 3 or 4 days a month		05 ☐
06	☐ About once a month		06 ☐
07	☐ Less than once a month		07 ☐
08	☐ Did not drink at all		08 ☐

c. On the day or days that you drank, how much did you drink on the average per day? *(Check one box for before and one box for during pregnancy.)* Choose the answer that comes closest.

	(Check one box this column) BEFORE PREGNANCY	*and*	*(Check one box this column)* DURING PREGNANCY
73 74 01	☐ 12 or more drinks		75 76 01 ☐
02	☐ 7 to 11 drinks		02 ☐ T
03	☐ 6 drinks		03 ☐
04	☐ 5 drinks		04 ☐
05	☐ 4 drinks		05 ☐
06	☐ 3 drinks		06 ☐
07	☐ 2 drinks		07 ☐
08	☐ 1 drink		08 ☐
09	☐ Less than one drink		09 ☐
10	☐ Did not drink at all		10 ☐

d. On a typical day that you drank, what kind(s) of alcoholic beverage did you usually drink? *(Check all that apply.)*

T
77 1 ☐ beer
78 1 ☐ wine
79 1 ☐ liquor

9. During most of your recent pregnancy, how many cups of coffee or tea with caffeine did you drink per day? *(Please give your best estimate.)*

_____ Number of cups per day of coffee and/or tea
CC101-102

10. During most of your recent pregnancy, how many aspirin tablets did you take per month? *(Include any products containing aspirin, e.g., powders, gums, seltzer tablets, etc.)*

_____ Number of tablets per month
CC 103-106

11a. During the first three months after your recent delivery, did you make any visits to a doctor, clinic, or hospital for postpartum care (concerning this delivery)?

106 1 ☐ Yes → *Go to question 11b*
2 ☐ No → *Go to question 12a*

b. How many visits did you make in all?

_____ visits in 3 months
CC 107

Figure II. Mother's mail questionnaire, 1980 National Natality Survey—Con.

12a. Which one of the following was the first birth control method you used following your 1980 delivery? *(Check one only. If none, check "NO".)*

- 108 ☐ Pill
- 109 ☐ IUD
- 110 ☐ Diaphragm
- 111 ☐ Sterilization of mother
- 112 ☐ Sterilization of father
- 113 ☐ Condom
- 114 ☐ Foam
- 115 ☐ Other Method
- 116 ☐ No → *Go to question 13a*

b. Where did you receive this birth control method? If a doctor prescribed a method, check the box indicating where the doctor was located. *(Check one only.)*

- 117 ☐ Hospital, at time of delivery (before discharge)
- 118 ☐ Hospital, after time of delivery (after discharge)
- 119 ☐ Physician's office
- 120 ☐ Family planning clinic
- 121 ☐ Drugstore, no prescription needed
- 122 ☐ Other Place *(Specify)* 2 _____

Questions 13 and 14 refer to live births only. If your 1980 delivery was a stillbirth, please go on to question 15.

13a. When your baby was first born, did you breast or bottle (formula) feed? *(Check one box only.)*

T

- 123 ☐ Breast fed only
- 2 ☐ Bottle fed only
- 3 ☐ Both breast and bottle fed
- 4 ☐ Other *(Specify)* 5 _____

b. Which of the following statements influenced your decision to breast feed or bottle feed your baby? *(Check all that apply.)*

- 124 ☐ Better for baby's health
- 125 ☐ More convenient
- 126 ☐ Less interference with daily activities
- 127 ☐ Feel closer to baby
- 128 ☐ This is the same as I did with my previous child
- 129 ☐ Encouragement from my doctor or other medical source
- 130 ☐ Encouragement from my family or friends
- 131 ☐ To help regain my figure
- 132 ☐ It costs less
- 133 ☐ My baby would not breast feed
- 134 ☐ Other *(Specify)* 2 _____

c. *(If you did NOT breast feed, go to question 14.)* **How old was your baby when you stopped breast feeding?**

T

_____ months
or
_____ weeks (CC 142-143) → *Go to question 14*

77 ☐ Still breast feeding

14. Thinking back, just before you became pregnant with your new baby, did you want to become pregnant at that time? *(Check one box only.)*

- 145 ☐ I wanted this pregnancy at an earlier time, as well as at that time.
- 2 ☐ I wanted to become pregnant at that time.
- 3 ☐ I did not want to become pregnant at the time, but I wanted another child sometime in the future.
- 4 ☐ I did not want to become pregnant at that time, or at any time in the future.

15. Do you expect to have more children? *(Check one box only.)*

- 147 ☐ Definitely yes
- 2 ☐ Probably yes
- 3 ☐ Probably no
- 4 ☐ Definitely no

→ *Go to question 17*

16. How many more children do you think you will have? *(Please give your best estimate.)*

_____ number (CC 148)

17. What is your birth date?

T

__ __ month (CC 149-150) __ __ day (151-152) __ __ year (153-154)

18. What is your height?

T

_____ feet (CC 155) _____ inches (CC 156-157)

19. What was your weight just before you became pregnant?

T

_____ lbs (CC 158-160)

b. What was your weight just before you delivered?

_____ lbs (CC 161-163)

20. What is the father's birth date?

__ __ month (CC 164-165) __ __ day (166-167) __ __ year (168-169)

21. What is the father's height?

_____ feet (CC 170) _____ inches (CC 171-172)

22. What was the father's weight just before you became pregnant?

_____ lbs (CC 173-175)

PART III. MARITAL AND PREGNANCY HISTORY

We are interested in the outcomes of ALL the pregnancies that you have ever had, whether you were single, married, divorced, separated, or widowed. Please include the 1980 delivery listed on the front of the questionnaire.

IF ANY OF YOUR PREGNANCIES RESULTED IN MULTIPLE DELIVERIES, COUNT EACH INFANT SEPARATELY. Example: A pregnancy of twins born alive would count as two live births.

23a. How many live births have you had? *(Count all deliveries of live born infants, even if the infant died shortly after birth.)*

_____ live births (CC 176-177)

b. How many stillbirths have you had? *(Count any infant who was dead upon delivery when the pregnancy had lasted 20 weeks or more.)*

_____ stillbirths (CC 178-179)

c. How many miscarriages have you had? *(Count any fetus which was dead upon delivery when the pregnancy lasted less than 20 weeks.)*

_____ miscarriages (CC 180-181)

d. How many abortions have you had? *(Count any induced or intentional terminations of pregnancies.)*

_____ abortions (CC 182-183)

Figure II. Mother's mail questionnaire, 1980 National Natality Survey—Con.

24. PLEASE FILL IN ONE BOX FOR EACH PREGNANCY OUTCOME. FOR EXAMPLE: TWINS WOULD COUNT AS TWO PREGNANCY OUTCOMES. IF YOU HAVE HAD MORE THAN 8 PREGNANCY OUTCOMES, PLEASE LIST THE REQUESTED INFORMATION ON A SEPARATE SHEET OF PAPER. PLEASE BE SURE TO INCLUDE YOUR 1980 DELIVERY.

PREGNANCY OUTCOME SECTION

Number of Pregnancy Outcome	How Pregnancy Ended	Date Pregnancy Ended	If Live Birth	
			Sex of Child	Other Information
FIRST PREGNANCY OUTCOME	T 184 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	T Mo Day Year CC 185 186 187 188 189 190	191 1 ☐ Male 2 ☐ Female	192 1 ☐ Still living in household 2 ☐ Still living, but not in household 3 ☐ Now dead → (give date of death) Mo Day Year CC 193 194 195 196 197 198
SECOND PREGNANCY OUTCOME	199 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	Mo Day Year CC 200 201 202 203 204 205	206 1 ☐ Male 2 ☐ Female	207 1 ☐ Still living in household 2 ☐ Still living, but not in household 3 ☐ Now dead → (give date of death) Mo Day Year CC 208 209 210 211 212 213
THIRD PREGNANCY OUTCOME	214 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	Mo Day Year CC 215 216 217 218 219 220	221 1 ☐ Male 2 ☐ Female	222 1 ☐ Still living in household 2 ☐ Still living, but not in household 3 ☐ Now dead → (give date of death) Mo Day Year CC 223 224 225 226 227 228
FOURTH PREGNANCY OUTCOME	229 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	Mo Day Year CC 230 231 232 233 234 235	236 1 ☐ Male 2 ☐ Female	237 1 ☐ Still living in household 2 ☐ Still living, but not in household 3 ☐ Now dead → (give date of death) Mo Day Year CC 238 239 240 241 242 243
FIFTH PREGNANCY OUTCOME	244 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	Mo Day Year CC 245 246 247 248 249 250	251 1 ☐ Male 2 ☐ Female	252 1 ☐ Still living in household 2 ☐ Still living, but not in household 3 ☐ Now dead → (give date of death) Mo Day Year CC 253 254 255 256 257 258
SIXTH PREGNANCY OUTCOME	259 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	Mo Day Year CC 260 261 262 263 264 265	266 1 ☐ Male 2 ☐ Female	267 1 ☐ Still living in household 2 ☐ Still living, but not in household 3 ☐ Now dead → (give date of death) Mo Day Year CC 268 269 270 271 272 273
SEVENTH PREGNANCY OUTCOME	274 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	Mo Day Year CC 275 276 277 278 279 280	281 1 ☐ Male 2 ☐ Female	282 1 ☐ Still living in household 2 ☐ Still living, but not in household 3 ☐ Now dead → (give date of death) Mo Day Year CC 283 284 285 286 287 288
EIGHTH PREGNANCY OUTCOME	289 1 ☐ Live birth 2 ☐ Miscarriage 3 ☐ Stillbirth 4 ☐ Abortion	Mo Day Year CC 290 291 292 293 294 295	296 1 ☐ Male 2 ☐ Female	297 1 ☐ Still living in household 2 ☐ Still living, but not in household 3 ☐ Now dead → (give date of death) Mo Day Year CC 298 299 300 301 302 303

NCS

Figure II. Mother's mail questionnaire, 1980 National Natality Survey—Con.

25. **How many times have you been married?** *(Check one box only.)*

T

484 1 ☐ Once
2 ☐ Twice
3 ☐ Three times or more
4 ☐ Never married → *Go to question 27a*

26. **Please indicate for each marriage the information requested.** *(If married more than two times, please continue on a separate sheet of paper.)*

T

a. **First marriage**

(1) Date marriage began:

month (CC 485 486) year (487 488)

(2) Current status: *(Check one box only)*

489 1 ☐ Still together → *Go to question 27a*
2 ☐ Widowed
3 ☐ Divorced
4 ☐ Separated

(3) Date widowed, divorced, or separated:

month (CC 490 491) year (492 493)

b. **Second marriage**

(1) Date marriage began:

month (CC 494 495) year (496 497)

(2) Current status: *(Check one box only)*

498 1 ☐ Still together → *Go to question 27a*
2 ☐ Widowed
3 ☐ Divorced
4 ☐ Separated

(3) Date widowed, divorced, or separated:

month (CC 499 500) year (501 502)

PART IV. EDUCATION AND OCCUPATION

27a. **What is the highest grade of regular school (elementary school, high school, two or four year college, or university) YOU completed?** *(Do not include business or trade schools or any other specialized training here.)* **Circle the number of the highest grade completed.**

T

None: 0 (CC 539 540)

Elementary or Secondary School: 1 2 3 4 5 6 7 8 9 10 11 12

University or College: 13 14 15 16

Graduate School: 17 18+

b. **Do you have any vocational or trade school training?**

541 1 ☐ Yes
2 ☐ No

c. **Were you enrolled in school at any time during your 1980 pregnancy?**

T

542 1 ☐ Yes, full time
2 ☐ Yes, part time
3 ☐ No

28a. **What is the highest grade of regular school (elementary school, high school, two or four year college, or university) THE FATHER completed?** *(Do not include business or trade schools or any other specialized training here.)* **Circle the number of the highest grade completed.**

T

None: 0 (CC 543 544)

Elementary or Secondary School: 1 2 3 4 5 6 7 8 9 10 11 12

University or College: 13 14 15 16

Graduate School: 17 18+

or 98 ☐ Don't know

b. **Does the father have any vocational or trade school training?**

545 1 ☐ Yes
2 ☐ No

c. **Was he enrolled in school at any time during your 1980 pregnancy?**

T

546 1 ☐ Yes, full time
2 ☐ Yes, part time
3 ☐ No

29. **Did YOU work at any time during the 12 months before your 1980 delivery?**

T

547 1 ☐ Yes → *Go to question 31*
2 ☐ No → *Go to question 30*

30. **Did YOU work prior to the 12 months before your 1980 delivery?**

T

548 1 ☐ Yes → *Go to question 31*
2 ☐ No → *Go to question 32*

31. **YOUR OCCUPATION:** *Please describe clearly your chief job activity or business during the 12 months before your 1980 delivery. If you didn't work during the 12 months before delivery, describe the job you held for the longest period of time before the 1980 delivery. If you had more than one job, describe the one at which you worked the most hours.*

a. **For whom did you work?** *(If you were on active duty in the Armed Forces, specify the branch.)*

Name of company, business, organization or other employer (CC 548)

b. **What kind of business or industry was this? Describe business activity at location where employed.** *(For example, junior-high school, retail supermarket, department store, dairy farm, research, auto assembly, hospital, real estate, etc.)*

T

Type of industry (CC 550 551)

c. **Is this business mainly manufacturing, wholesale trade, retail trade, or other?** *(Check one box only.)*

553 1 ☐ Manufacturing
2 ☐ Wholesale trade
3 ☐ Retail trade
4 ☐ Other (Agricultural, construction, service, government, etc.)

d. **What kind of work were you doing?** *(For example, real estate agent, instructor, clerk, musician, etc.)*

T

occupation (CC 554 556)

e. **What were your most important activities or duties?** *(For example, sell houses, teach math, general office work, play guitar in band, etc.)*

duties

f. **Which one of the listed categories best describes your type of employment?** *(Check one box only.)*

557 1 ☐ Employee of private company, business, or individual, for wages, salary or commissions
2 ☐ Federal government employee
3 ☐ State government employee
4 ☐ Local government employee (city, county, etc.)
5 ☐ Self-employed in own business, professional practice or farm — not incorporated
6 ☐ Self-employed in own business, professional practice or farm — incorporated
7 ☐ Working without pay in family business or farm

Figure II. Mother's mail questionnaire, 1980 National Natality Survey—Con.

g. **What were the dates of employment for this job?** *(If you worked at the same job before and after your delivery, please enter the date you stopped work before you gave birth.)*

T

month	year		month	year
CC 558-559	560-561	to	CC 562-563	564-565

h. **What was the number of hours you usually worked per week at this job?**

T

_____ hours per week
CC 566-567

i. **How many days per week did you usually work at this job?**

_____ days per week
CC 568-569

j. **At what time of day did you usually begin and end work?** *(Circle A.M., P.M., noon or midnight next to each time.)*

_____	A.M.	Noon			A.M.	Noon	
	P.M.	Midnight	to	_____	P.M.	Midnight	
begin CC 570-573	CC 574			end CC 575-578	CC 579		

k. **In your job, did you work with or have exposure to radiation — radioactive isotopes or elements** *(Examples: microwave, x-rays, fluoroscopic equipment, lasers)*?

580 1 ☐ Yes *(Specify)* 2 _____
3 ☐ No
4 ☐ Not sure

32a. During the 12 months preceding your delivery, were you exposed to chemicals used to kill insects, rodents, weeds, or fungi?

581 1 ☐ Yes *(Specify)* 2 _____ → *Go to question 32b*
3 ☐ No → *Go to question 33*
4 ☐ Not sure → *Go to question 33*

b. *(If yes)* **Where did this exposure occur?** *(Check all that apply.)*

582 1 ☐ At home
583 1 ☐ In the area where I lived
584 1 ☐ At my job
585 1 ☐ Other *(Specify)* 2 _____

33. THE FATHER'S OCCUPATION: *Please describe clearly the father's chief job activity or business during the 12 months before your 1980 delivery. If he had more than one job, describe the one at which he worked the most hours. If he did not work during the year before your delivery, give information for his last job or business prior to that. Answer as many parts as you can. If he never worked, check box* ☐ *and go to Question 34.* 615 1

a. **For whom did THE FATHER work?** *(If he was on active duty in the Armed Forces, specify the branch.)*

_____
Name of company, business, organization or other employer
CC 616

b. **What kind of business or industry was this? Describe business activity at location where employed.** *(For example, junior-high school, retail supermarket, department store, dairy farm, research, auto assembly, hospital, real estate, etc.)*

T

_____
Type of industry
CC 617-619

c. **Is this business mainly manufacturing, wholesale trade, retail trade, or other?** *(Check one box only.)*

620 1 ☐ Manufacturing
2 ☐ Wholesale trade
3 ☐ Retail trade
4 ☐ Other (Agricultural, construction, service, government, etc.)

d. **What kind of work was the father doing?** *(For example, salesman, instructor, surgeon, fireman, musician, etc.)*

T

_____
occupation
CC 621-623

e. **What were his most important activities or duties?** *(For example, selling cars, teaching math, performing operations, fighting fires, playing piano in a restaurant, etc.)*

_____
duties

f. **Which one of the listed categories best describes his type of employment?** *(Check one box only.)*

624 1 ☐ Employee of private company, business, or individual, for wages, salary or commissions
2 ☐ Federal government employee
3 ☐ State government employee
4 ☐ Local government employee (city, county, etc.)
5 ☐ Self-employed in own business, professional practice or farm — not incorporated
6 ☐ Self-employed in own business, professional practice or farm — incorporated
7 ☐ Working without pay in family business or farm

g. **What were the dates of employment for this job?**

T

month	year		month	year
CC 625-626	627-628	to	CC 629-630	631-632

h. **What was the number of hours he usually worked per week at this job?**

T

_____ hours per week
CC 633-634

i. **How many days per week did he usually work at this job?**

_____ days per week
CC 635-636

j. **At what time of day did he usually begin and end work?** *(Circle A.M., P.M., noon or midnight next to each time.)*

_____	A.M.	Noon			A.M.	Noon	
	P.M.	Midnight	to	_____	P.M.	Midnight	
begin CC 637-640	CC 641			end CC 642-645	CC 646		

k. **In the father's job, did he work with or have exposure to radiation — radioactive isotopes or elements** *(Examples: microwave, x-rays, fluoroscopic equipment, lasers)*?

647 1 ☐ Yes *(Specify)* 2 _____
3 ☐ No
4 ☐ Not sure

34a. During the 12 months preceding your delivery, was the father exposed to chemicals used to kill insects, rodents, weeds, or fungi?

648 1 ☐ Yes *(Specify)* 2 _____ → *Go to question 34b*
3 ☐ No → *Go to question 35*
4 ☐ Not sure → *Go to question 35*

b. *(If yes)* **Where did this exposure occur?** *(Check all that apply.)*

649 1 ☐ At home
650 1 ☐ In the area where he lived
651 1 ☐ At his job
652 1 ☐ Other *(Specify)* 2 _____

Figure II. Mother's mail questionnaire, 1980 National Natality Survey—Con.

35. *The following questions refer to your annual income, the father's income, and the total family income from all household members during the 12 months before your 1980 delivery. Include all income from wages, salaries, investments, property, social security, welfare, unemployment compensation, etc. If the exact amount is not known, PLEASE CHECK YOUR BEST ESTIMATE.*

a. What was your annual income before taxes from all sources during the 12 months before your 1980 delivery. *(Check the box that gives the best estimate.)*

653-654 01 ☐ $0 to $2,999
02 ☐ $3,000 to $5,999
03 ☐ $6,000 to $8,999
04 ☐ $9,000 to $11,999
05 ☐ $12,000 to $14,999
06 ☐ $15,000 to $17,999
07 ☐ $18,000 to $20,999
08 ☐ $21,000 to $23,999
09 ☐ $24,000 to $26,999
10 ☐ $27,000 to $29,999
11 ☐ $30,000 or more

b. What was the father's annual income (before taxes) during the 12 months before your 1980 delivery. *(Check the box that gives the best estimate.)*

655-656 01 ☐ $0 to $2,999
02 ☐ $3,000 to $5,999
03 ☐ $6,000 to $8,999
04 ☐ $9,000 to $11,999
05 ☐ $12,000 to $14,999
06 ☐ $15,000 to $17,999
07 ☐ $18,000 to $20,999
08 ☐ $21,000 to $23,999
09 ☐ $24,000 to $26,999
10 ☐ $27,000 to $29,999
11 ☐ $30,000 or more

c. What was the total annual family income before taxes of all the household members (include relatives only) you lived with during the 12 months before your 1980 delivery? Include your own income as well. The household is the one you lived in for most of the 12 months before your delivery. *(Check the box that gives the best estimate.)*

T
657-658 01 ☐ $0 to $2,999
02 ☐ $3,000 to $5,999
03 ☐ $6,000 to $8,999
04 ☐ $9,000 to $11,999
05 ☐ $12,000 to $14,999
06 ☐ $15,000 to $17,999
07 ☐ $18,000 to $20,999
08 ☐ $21,000 to $23,999
09 ☐ $24,000 to $26,999
10 ☐ $27,000 to $29,999
11 ☐ $30,000 or more

35d. What were the sources of the total family income during the 12 months before your delivery? *(Check all that apply.)*

659 1 ☐ Wage or salary
660 1 ☐ Welfare, aid to families with dependent children
661 1 ☐ Food stamps
662 1 ☐ Other welfare (old age assistance, aid to the blind or the totally disabled or other general assistance)
663 1 ☐ Social security or retirement
664 1 ☐ Unemployment or workman's compensation
665 1 ☐ Government employee pensions or private pensions
666 1 ☐ Net income from own non-farm business, professional practice or partnership
667 1 ☐ Fee or commission
668 1 ☐ Net income from a farm
669 1 ☐ Veteran's payments
670 1 ☐ Dividends, interest, property rental
671 1 ☐ Alimony or child-support from absent father for any of your children
672 1 ☐ Any other sources of income

36. Which one of these groups best describes your racial background? *(Check one box only.)*

T
673 1 ☐ American Indian or Alaskan Native
2 ☐ Asian or Pacific Islander
3 ☐ Black or Negro
4 ☐ White
5 ☐ Other *(Specify)* 6 _____

37a. Which of these groups best describes your national origin or descent? *(Check all that apply.)*

T
674 1 ☐ German
675 1 ☐ Italian
676 1 ☐ Irish
677 1 ☐ French
678 1 ☐ Polish
679 1 ☐ Russian
680 1 ☐ English, Scot, Welsh
681 1 ☐ Puerto Rican
682 1 ☐ Cuban
683 1 ☐ Mexicano, Chicano, Mexican American
684 1 ☐ Other Spanish (Spain/Hispano/Other Latin American)
685 1 ☐ African, Black, Negro
686 1 ☐ American Indian or Alaskan Native
687 1 ☐ Asian or Pacific Islander, such as Chinese, Japanese, Korean, Filipino, or Samoan
688 1 ☐ Other *(Specify)* 2 _____

b. Which one of the above groups do you identify with the most?

_____
(Specify group name)
CC 689 690

Figure II. Mother's mail questionnaire, 1980 National Natality Survey—Con.

38. T **Which one of these groups best describes the father's racial background?** *(Check one box only.)*

- 692 1 ☐ American Indian or Alaskan Native
- 2 ☐ Asian or Pacific Islander
- 3 ☐ Black or Negro
- 4 ☐ White
- 5 ☐ Other *(Specify)* 6 _____

39a. T **Which of these groups best describes the father's national origin or descent?** *(Check all that apply.)*

- 693 1 ☐ German
- 694 1 ☐ Italian
- 695 1 ☐ Irish
- 696 1 ☐ French
- 697 1 ☐ Polish
- 698 1 ☐ Russian
- 699 1 ☐ English, Scot, Welsh
- 700 1 ☐ Puerto Rican
- 701 1 ☐ Cuban
- 702 1 ☐ Mexicano, Chicano, Mexican American
- 703 1 ☐ Other Spanish (Spain/Hispano/Other Latin American)
- 704 1 ☐ African, Black, Negro
- 705 1 ☐ American Indian or Alaskan Native
- 706 1 ☐ Asian or Pacific Islander, such as Chinese, Japanese, Korean, Filipino, or Samoan
- 707 1 ☐ Other *(Specify)* 2 _____

b. Which one of the above groups does the father identify with the most?

_____
(Specify group name)
CC 708 709

40a. T **During the year preceding your 1980 delivery, did you receive any of the listed examinations or treatments?** *(Check all that apply.)*

- 710 1 ☐ Thyroid tests, scans, uptakes (nuclear medicine)
- 711 1 ☐ Sonogram, scanning (picture of the baby before it was born)
- 712 1 ☐ Ultrasound (listened to the baby's heart before it was born)
- 713 1 ☐ X-rays (include all x-rays — head, chest, dental, abdomen, etc.)
- 714 1 ☐ Deep heat, diathermy, microwave, and shortwave or radio-frequency (include treatment for low back pain, aches, etc.)
- 715 1 ☐ NO EXAMINATIONS OR TREATMENTS LISTED ABOVE

b. For EACH examination or treatment checked, please list the names and addresses of the providers of these services. If your last name at time of visit was different from that on page one of this questionnaire, please indicate what your name was at that time. *(Continue on a separate sheet of paper if necessary.)*

List names in Question 40b above

40b. T

_____ Name of provider

_____ Address

_____ City State Zip Code

_____ Last name at time of visit

_____ Name of provider

_____ Address

_____ City State Zip Code

_____ Last name at time of visit

41a. Is the name and address printed on the label of this questionnaire correct?

- 716 1 ☐ Yes → *Go to question 42*
- 2 ☐ No

b. Please give your correct name and current address.

_____ Name

_____ Address

_____ City State Zip Code

42. May we please have a phone number where we can reach you if we need to clarify some of these questions with you? We will discuss these questions only with you. Please indicate if you prefer that we telephone you during certain hours.

_____ Area Code Phone Number

_____ Hours

PLEASE READ AND SIGN THE CONSENT STATEMENT BELOW.

PHS-T489-4 (4/80)

CONSENT STATEMENT

OMB Clearance No. 68-S-78027

T I have voluntarily participated in this national health survey and hereby give my consent for the National Center for Health Statistics to obtain supplemental medical information from health records maintained on me by medical sources. I understand that the National Center for Health Statistics will use this information only for statistical purposes in health research, and no information which identifies either me or the medical source will ever be released or published.

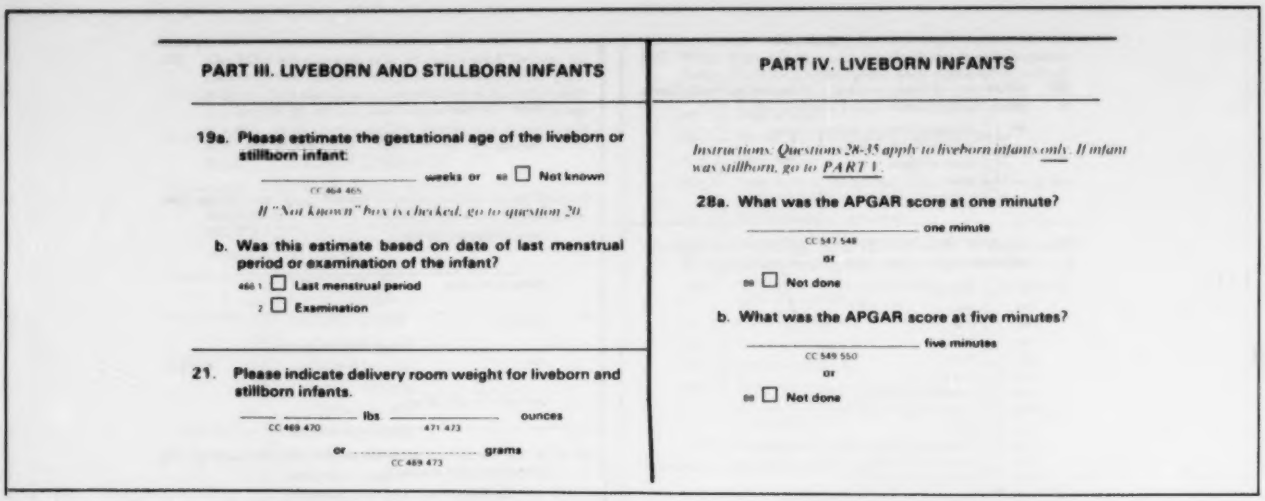
_____ (Today's Date) CC 717 722

_____ (Your Signature) CC 723

THANK YOU VERY MUCH FOR YOUR COOPERATION

8

Figure II. Mother's mail questionnaire, 1980 National Natality Survey—Con.



PART III. LIVEBORN AND STILLBORN INFANTS

19a. Please estimate the gestational age of the liveborn or stillborn infant:

_____ weeks or 88 ☐ Not known
CC 464 465

If "Not known" box is checked, go to question 20.

b. Was this estimate based on date of last menstrual period or examination of the infant?

466 1 ☐ Last menstrual period
2 ☐ Examination

21. Please indicate delivery room weight for liveborn and stillborn infants.

____ _____ lbs _____ ounces
CC 469 470 471 473

or _____ grams
CC 469 473

PART IV. LIVEBORN INFANTS

Instructions: Questions 28-35 apply to liveborn infants only. If infant was stillborn, go to PART V.

28a. What was the APGAR score at one minute?

_____ one minute
CC 547 548

or

88 ☐ Not done

b. What was the APGAR score at five minutes?

_____ five minutes
CC 549 550

or

88 ☐ Not done

Figure III. Hospital questionnaire, 1980 National Natality Survey (abbreviated)

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